

CLAIMS:

1. A reading method for reading a magneto-optical recording medium, comprising a storage layer and a readout layer, wherein an expanded domain leading to a readout pulse is generated in said readout layer by copying a mark region from said storage layer to said readout layer upon heating by a radiation power and with the aid of an external magnetic field, said method comprising the steps of:
 - a) controlling the size of a spatial copy window of said copying process by varying a predetermined reading parameter in response to a control information derived from said readout pulse,
 - b) applying a predetermined additional pattern of change to said predetermined parameter,
 - and
 - c) obtaining said control information from a deviation of a clock signal.
2. A method according to claim 1, wherein said clock signal is recovered from said readout pulse, from a wobbled groove, or from embossed marks provided on said recording medium, or from any combination thereof.
3. A method according to claim 1 or 2, wherein said predetermined parameter corresponds to the value of said radiation power.
4. A method according to claim 1 or 2, wherein said predetermined parameter corresponds to the strength of said external magnetic field.
5. A method according to claim 1 or 2, wherein said predetermined parameter corresponds to a combination of the value of said radiation power and the strength of said external magnetic field.
6. A method according to claim 5, wherein one of said values of said radiation power and said strength of said external magnetic field is used for coarse control and the other one is used for fine control.

7. A method according to any one of the claims 4 to 6, wherein said strength of said external magnetic field is varied by varying a coil current of a magnetic head.

5 8. A method according to any one of the claims 1 to 7, wherein said control information is obtained from a deviation of a maximum value of a phase error of said recovered clock signal from a predetermined set value.

9. A method according to any one of the claims 1 to 7, wherein said
10 predetermined additional change pattern is a periodic pattern of a predetermined frequency.

10. A method according to claim 9, wherein said periodic pattern is a sinusoidal pattern.

15 11. A method according to claim 9, wherein said periodic pattern is a square-wave pattern.

12. A method according to claim 11, wherein the frequency of said square-wave
20 pattern corresponds to half of a bit frequency or an integer multiple of half of the bit frequency.

13. A method according to any one of the claims 1 to 7, wherein said clock signal is recovered by using a phase-locked loop function.

25 14. A reading apparatus for reading from a magneto-optical recording medium comprising a storage layer and a readout layer, wherein an expanded domain leading to a readout pulse is generated in said readout layer by copying a mark region from said storage layer to said readout layer upon heating by a radiation power and the aid of an external magnetic field, said apparatus comprising:

30 a) control means for controlling the size of a spatial copy window of said copying process by varying a predetermined reading parameter in response to a control information derived from said readout pulse,

b) change means for applying a predetermined additional pattern of change to said predetermined parameter, and

c) clock recovery means for obtaining said information from a deviation of a clock signal.

15. A reading apparatus according to claim 14, wherein said clock recovery means is arranged to recover said clock signal from said readout pulse, from a wobbled groove, or
5 from embossed marks provided on said recording medium, or from any combination thereof.

16. A reading apparatus according to claim 14 or 15, wherein said control means is arranged to vary said radiation power.

10 17. A reading apparatus according to claim 14 or 15, wherein said control means is arranged to vary said external magnetic field.

18. A reading apparatus according to claim 14 or 15, wherein said control means is arranged to vary the value of said radiation power and the strength of said external
15 magnetic field in combination.

19. A reading apparatus according to claim 18, wherein said control means is arranged to use one of said values of said radiation power and said strength of said external magnetic field for coarse control and the other one for fine control.

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20. A reading apparatus according to any one of the claims 14 to 19, also comprising field control means for sustaining said external magnetic field until said mark region is copied and for reversing said external magnetic field in response to detection of said readout pulse.

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21. A reading apparatus according to any one of the claims 14 to 20, wherein said clock recovery means is arranged to obtain said control information from a deviation of a maximum value of a phase error of said clock signal from a predetermined set value.

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22. A reading apparatus according to any one of the claims 14 to 21, wherein said clock recovery means comprises a phase-locked loop circuit.

23. A reading apparatus according to any one of the claims 14 to 22, wherein said change means is arranged to use a periodic pattern of a predetermined frequency as said predetermined additional change pattern.

5 24. A reading apparatus according to claim 23, wherein said periodic pattern is a sinusoidal pattern.

25. A reading apparatus according to claim 23, wherein said periodic pattern is a square-wave pattern.

10 26. A reading apparatus according to claim 25, wherein the frequency of said square-wave pattern corresponds to half of a bit frequency or an integer multiple of half of the bit frequency.

15 27. A reading apparatus according to any one of the claims 14 to 26, wherein said reading apparatus is a disk player for MAMMOS disks.